

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
David J. Corisis et al. § Group Art Unit: 2835
Serial No.: 09/152,659 § Confirmation No.: 9522
Filed: September 14, 1998 § Examiner: Chervinsky, Boris Leo
For: Integrated Circuit Package Support § Atty. Docket:
System § MICS:0180-2/FLE/MAN/TOM
§ 97-0553.02

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July 16, 2008 /Robert A. Manware/
Date Robert A. Manware

APPEAL BRIEF PURSUANT TO 37 C.F.R. §§ 41.31 AND 41.37

This Appeal Brief is being filed in furtherance to the Notice of Appeal and Pre-Appeal Brief Request for Review mailed on May 5, 2008, and received by the Patent Office on May 5, 2008.

The Commissioner is authorized to charge the requisite fee of \$510.00, and any additional fees which may be required, to the credit card charge authorization submitted electronically with the present filing. However, if for any reason this charge fails, the Commissioner is authorized to charge Deposit Account No. 06-1315; Order No. MICS:0180-2/FLE/MAN (97-0553.02).

1. **REAL PARTY IN INTEREST**

The real party in interest is Micron Technology Inc., the Assignee of the above-referenced application by virtue of the Assignment to Micron Technology Inc., recorded at reel 008846, frame 0872, and dated November 25, 1997. Accordingly, Micron Technology Inc., as the parent company of the Assignee of the above-referenced application, will be directly affected by the Board's decision in the pending appeal.

2. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellants' legal representative in this Appeal.

3. STATUS OF CLAIMS

Claims 33-45, and 68-74 are currently pending, are currently under final rejection and, thus, are the subject of this Appeal. Claims 1-32 and 46-67 were previously canceled.

4. STATUS OF AMENDMENTS

There are no outstanding amendments to be considered by the Board.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates generally to packages with a tall aspect ratio, such as vertical surface mount packages ("VSMP"), for integrated circuits and particularly, to techniques for supporting those structures. *See Application, page 1, lines 5-8.* Embodiments of the present invention provide a support for these integrated circuit packages. *See e.g., Application, page 5, lines 14-20.* The support is secured to a surface and engages the packages through various techniques.

As discussed above, claims 33-45 and 68-74 are the subject of this appeal. Of these, claims 33, 68, and 71 are independent claims. The subject matter of independent claims 33, 68, and 71 is summarized below.

With regard to the aspect of the invention set forth in independent claim 33, discussions of the recited features of claim 33 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment of claim 33 provides an electronic device (e.g., PCB or card 10) that includes a plurality of integrated circuit packages (e.g., VSMPs 12 or other packages). *See e.g.*, Application, page 5, lines 6-8. The electronic device (e.g., PCB or card 10) includes a contact surface (e.g., surface 11) electronically connected (e.g., via L-shaped contacts 16) to each of said packages (e.g., VSMPs 12 or other packages). *See e.g., id.* at page 5, lines 8-10. The electronic device (e.g., PCB or card 10) further includes a support (e.g., support 14) arranged to engage each of said packages (e.g., VSMPs 12 or other packages) at a point (e.g., notched portion 24) spaced above said surface (e.g., surface 11) to prevent movement of said packages (e.g., VSMPs 12 or other packages) relative to said surface (e.g., surface 11), wherein said support is secured (e.g., via post 22) to said surface (e.g., surface 11). *See e.g., id.* at page 5, lines 14-20.

Further, with regard to the aspect of the invention set forth in independent claim 68, discussions of the recited features of claim 68 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment of independent claim 68 provides an electronic device (e.g., PCB or card 10) that includes a plurality of integrated circuit packages (e.g., VSMPs 12 or other packages) connected to a surface (e.g., surface 11). *See e.g.*, Application, page 5, lines 6-8. The electronic device (e.g., PCB or card 10) further includes at least one rail (e.g., rails 18) coupled to the surface (e.g., surface 11). *See e.g., id.* at page 5, lines 14-20. The rail (e.g., rails 18) extends along the sides of the plurality of integrated circuit packages (e.g., VSMPs 12 or other packages) and is configured to engage (via the bump or tab 26) the plurality of integrated circuit packages (e.g., VSMPs 12 or other packages). *See e.g., id.*

Finally, with regard to the aspect of the invention set forth in independent claim 71, discussions of the recited features of claim 71 can be found at least in the below cited locations of the specification and drawings. By way of example, an embodiment of

independent claim 71 provides an electronic device (e.g., PCB or card 10) that includes a plurality of integrated circuit packages (e.g., VSMPs 12 or other packages) connected to a surface (e.g., surface 11). *See e.g.*, Application, page 5, lines 6-8. The electronic device (e.g., PCB or card 10) further includes a cross piece (e.g., cross piece 30) coupled to the surface (e.g., surface 11) and extending over the plurality of integrated circuit packages (e.g., VSMPs 12 or other packages) in a direction transverse to the plurality of integrated circuit packages (e.g., VSMPs 12 or other packages). *See e.g.*, *id.* at page 5, lines 28-32; page 6, lines 1-2.

6. **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

First Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner's first ground of rejection in which the Examiner rejected claims 33-38, 41, 42, 68, 69, 70, and 71-73 under 35 U.S.C. § 103(a) as being unpatentable over Chiu, U.S. Patent no. 5,239,199 (hereinafter "Chiu") in view of Jeffries et al., U.S. Patent No. 5,815,371 (hereinafter "Jeffries") or alternatively in view of either Edfors, U.S. Patent No. 5,050,039 (hereinafter "Edfors") or Russell et al., U.S. Patent No. 5,432,678 (hereinafter "Russell").

Second Ground of Rejection for Review on Appeal:

Appellants respectfully urge the Board to review and reverse the Examiner's second ground of rejection in which the Examiner rejected claims 39, 40, 43-45, and 74 under 35 U.S.C. § 103(a) as being unpatentable over Chiu in view of Jeffries and further in view of Cipolla et al., U.S. Patent No. 5,343,366 (hereinafter "Cipolla") or alternatively in view of Shuff, U.S. Patent No. 5,812,374 (hereinafter "Shuff").

7. **ARGUMENT**

As discussed in detail below, the Examiner has improperly rejected the pending claims. Further, the Examiner has misapplied long-standing and binding legal precedents and principles in rejecting the claims under 35 U.S.C. § 103(a). Accordingly, Appellants respectfully request full and favorable consideration by the Board, as Appellants strongly believe that claims independent claims 33, 68, and 71 and their respective dependent claims are currently in condition for allowance.

A. **Ground of Rejection No. 1:**

The Examiner rejected claims 33-38, 41, 42, 68, 69, 70, and 71-73 under 35 U.S.C. § 103(a) as being unpatentable over Chiu, U.S. Patent no. 5,239,199 (hereinafter “Chiu”) in view of Jeffries et al., U.S. Patent No. 5,815,371 (hereinafter “Jeffries”) or alternatively in view of either Edfors, U.S. Patent No. 5,050,039 (hereinafter “Edfors”) or Russell et al., U.S. Patent No. 5,432,678 (hereinafter “Russell”). Appellants respectfully traverse this rejection.

1. **Judicial precedent has clearly established a legal standard for an obviousness rejection under 35 U.S.C. § 103.**

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (B.P.A.I. 1979). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). However, it is not enough to show that all the elements exist in the prior art since a claimed invention composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). It is important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.* Specifically, there must be some articulated reasoning with a rational underpinning to support a conclusion of obviousness; a conclusory statement will not suffice. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Indeed, the factual inquiry determining whether to combine references

must be thorough and searching, and it must be based on *objective evidence of record*. *In re Lee*, 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002).

Further, it is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983); M.P.E.P. § 2145. Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959); *see M.P.E.P. § 2143.01(VI)*. If the proposed modification or combination would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *see M.P.E.P. § 2143.01(V)*.

2. **The Examiner's rejection of claim 68 under 35 U.S.C. § 103 is improper because the cited combination fails to disclose "at least one rail coupled to the surface, wherein the rail extends along the sides of the plurality of integrated circuit packages" as recited by independent claim 68.**

In rejecting the claims, the Examiner stated that Chiu “discloses the claimed invention except having the support secured to a surface.” Final Office Action, page 3. Appellants note that independent claim 68 recites, *inter alia*, “at least one rail coupled to the surface, wherein the rail extends along the sides of the plurality of integrated circuit packages” (*Emphasis added*). These features, among others, are not believed to be disclosed by Chiu or the secondary references.

In contrast to the claim features of claim 68 recited above, the structure disclosed in Chiu engages the top of various memory devices and does not include a rail extending

along the sides of the memory devices. As stated in Chiu, “[d]evice 10 has a heat sink 16 mounted on the top side, as illustrated.” Chiu, col. 2, lines 12-13; Figs. 2-3. Further, Chiu also states that “[t]o assembly [sic] an array 30 of devices 10, they may be mounted in heat sink/holding fixture 31 by placing the heat sink 16 of each device in a slot 34 in the top of the fixture.” *Id.* at col. 2, lines 50-54. (Emphasis added). Additional embodiments in Chiu also disclose a “heat sink/holding fixture 31” such that the memory device “may be mounted in heat sink/holding fixture 31 by placing the heat sink 16 of each device in a slot 34 in the top of the fixture.” *Id.* at col. 2, lines 49-53; Fig. 6. (Emphasis added) Similarly, the heat sink 31a depicted in Figs 8 and 10 of Chiu also engage the memory device through a slot in the top of the fixture. *Id.* at Fig. 8 and 10. Appellants assert this heat sink/holding fixture 31 is not a “rail,” as recited by claim 68. Further, in all the embodiments described in Chiu, the heat sink/holding fixture 31 engages the devices 10 at the top of the fixture.

According, Appellants respectfully assert that Chiu does not disclose “at least one rail” that “extends along the sides of the plurality of integrated circuit packages” as recited in independent claim 68. Because the secondary references do not cure this deficiency of Chiu, the cited combination does not disclose all elements of claim 68 and, thus, cannot render claim 68 obvious.

3. **The Examiner’s rejection of claim 71 under 35 U.S.C. § 103 is improper because the cited combination fails to disclose “a cross piece coupled to the surface and extending over the plurality of integrated circuit packages in a direction transverse to the plurality of integrated circuit packages” as recited by independent claim 71.**

In rejecting the claims, the Examiner stated that Chiu “discloses the claimed invention except having the support secured to a surface.” Final Office Action, page 3. Appellants note that independent claim 68 recites, *inter alia*, “a cross piece coupled to the surface and extending over the plurality of integrated circuit packages in a direction transverse to the plurality of integrated circuit packages.” (Emphasis added). These

features, among others, are not believed to be disclosed by Chiu or the secondary references.

In contrast to the claim features of claim 71 recited above, Chiu discloses a fixture 31 that includes a slot 34 in the fixture 31 to engage each heat sink 16 of each memory device 10. Chiu, col. 2, lines 49-53. These slots appear to engage each device 10 in a direction parallel to the devices 10. *Id.* As seen in Fig. 6 in Chiu, there is no cross piece that extends *over* and in a direction transverse to the devices 10 as recited in independent claim 71. Instead, the fixture 31 includes slots 34 such that the devices 10 insert into the fixture itself. *Id.* at FIG. 6. As best understood, the slots 34 in Chiu extend entirely in a direction parallel to the devices 10. *Id.* Appellants assert that neither the heat sink/fixture 31 nor its parallel slots 34 are a “cross piece” that extends “in a direction transverse” to the devices 10.

According, Appellants respectfully assert that Chiu does not disclose “a cross piece coupled to the surface and extending over the plurality of integrated circuit packages in a direction transverse to the plurality of integrated circuit packages.” as recited in independent claim 71. Because the secondary references do not cure this deficiency of Chiu, the cited combination does not disclose all elements of claim 71 and, thus, cannot render claim 71 obvious.

4. The Examiner’s proposed combination of Chiu in view of Jeffries or alternatively in view of either Edfors or Russell under 35 U.S.C. § 103 is improper.

In rejecting independent claims 33, 68, and 71, the Examiner stated that Chiu “disclosed the claimed invention except the support being secured to the surface.” Final Office Action, page 3. The Examiner combined Chiu with Jeffries, or, alternatively, Edfors or Russell, stating that these secondary references disclose “the support being secured to the surface of a circuit board.” *Id.* Appellants assert that the Examiner’s combination of Chiu and the secondary references of Jeffries, Edfors, and Russell is

unsupported by the cited prior art and the invention disclosed in Chiu, because: 1) Chiu teaches away from the asserted combination; 2) Such an obviousness determination does not have any “rational underpinning to support a conclusion of obviousness.” M.P.E.P. §2142; and 3) the “proposed modification” necessary for the obviousness conclusion makes the prior art (Chiu) “unsatisfactory for its intended purpose.” M.P.E.P. §2143.01. Appellants assert it would not be obvious to combine the unsecured support of Chiu with the techniques disclosed in Jeffries, Edfors, or Russell, for the reasons set forth below.

The fixture disclosed in Chiu is designed to be unsecured to a surface so that devices may be removed and inserted into the fixture during “testing and burn-in,” providing “easy repair and replacement of devices.” Chiu, col. 3, lines 63-64. As stated in Chiu and as acknowledged by the Examiner, the fixture/heat sink disclosed in Chiu “may be sprung open for securing the heat sink of each device...[e]ach leg 31c and 31d moves, for example for “a” to “b” when the legs are pulled apart.” *Id.* at col. 3, lines 22-30; *See* Final Office Action, page 3 (“Chiu discloses the claimed invention except the support being secured to the surface.”) As stated in Chiu, the fixture/heat sink is not secured to the surface so that “[a]ny bad devices from an array can be removed from the fixture and replaced with a good device.” *Id.* at col. 3, lines 54-56. Indeed, one of the objectives of Chiu is to provide a “fixture for testing and burn-in in module form” and “easy repair and replacement of devices.” *Id.* at col. 3, lines 62-63. Additionally, Appellants note that the independent claims of Chiu are clearly directed to a “removable fixture.” *Id.* at col. 4, line 19; col. 5, line 9. (Emphasis added).

In contrast, the three secondary references cited by the Examiner each disclose a fixture or support that is secured to a surface or printed circuit board, and the devices disclosed in the secondary references are used for a clearly different purpose than the support disclosed in Chiu. For example, the device disclosed in Jeffries is used to support and secure a “daughter board to a mother board,” such as in the context of a “desktop computer or a tower computer.” Jeffries, col. 2, lines 59-65. (Emphasis added).

Further, the “heat dissipater” disclosed in Jeffries “prevents the daughter board 14 from vibrating back and forth, but also prevents the daughter board from releasing from the connector 16.” *Id.* at col. 3, lines 66-67; col. 4, lines 1-2. (Emphasis added). Thus, the device in Jeffries is not used during testing or burn-in, but is used to secure an add-on “daughter board” to the mother board of a personal computer and is not intended to secure a multiple devices for easy insertion or removal.

Similarly, the device disclosed in Edfors discusses an assembly in which “a plurality of circuit chips...have their top sides thermally and mechanically attached to...a centrally disposed metal sink block.” Edfors, col. 1, lines 64-67; col. 2, line 1. (Emphasis added). Additionally, the circuit chips discussed in Edfors are attached “with a thermally conductive electrically insulating adhesive such as diamond filled epoxy.” *Id.* at col. 3, lines 20-25. Again, Edfors does not disclose or envision a use for testing or burn-in, as the circuit chips are secured in the assembly by an adhesive or epoxy and cannot be easily removed or inserted during burn-in or testing.

Finally, Russell discloses a “mounting pad” for an “integrated circuit chip” to be secured to a printed circuit board. Russell, col. 1, lines 55-66. (Emphasis added). The integrated circuit chips are “bonded to the mounting pad (102) with thermally conductive adhesive or epoxy” emphasis added. *Id.* at col. 3, lines 43-47. (Emphasis added). Additionally, in Russell, the “side and central portions” of the “mounting pad” are secured by “solder or conductive epoxy...applied to the aperture.” *Id.* at col. 4, lines 1-5. (Emphasis added). Thus, both the “mounting pads” and the “integrated circuit chips” held in the “mounting pad” are secure by an adhesive or epoxy, making movement of the “mounting pad” or insertion or removal of the “integrated circuit chips” impossible.

As described above, the devices and techniques disclosed in Jeffries, Edfors, and Russell are not used during testing or burn-in, but are used to secure boards or chips to

another board or chip and thus, are not intended to provide for easy insertion or removal of multiple devices.

Based on the above discussion, the combination of the cited references is improper because Chiu teaches away from combination with the secondary references Jeffries, Edfors, and Russell. As stated above, Chiu includes a fixture/heat sink designed to be used during “testing and burn-in” of memory chips, and Chiu specifically states that this functionality allows “easy repair and replacement” of such chips. Chiu, col. 3, lines 61-62. To allow this easy repair and replacement, the fixture in Chiu is unsecured to any surface so that the legs 31c and 31d can be pulled apart. *Id.* at col. 3, lines 22-30. Chiu teaches away from the devices disclosed in Jeffries, Edfors, and Russell by teaching a support unsecured to a surface for a different purpose than the teachings of Jeffries, Edfors, and Russell.

Additionally, the combination of the cited references is improper because there would be no rational reason to use the inventions disclosed in the secondary references of Jeffries, Edfors, and Russell in combination with Chiu, as there is no need for any mounting technique that permanently secures the heat sink/fixture of Chiu. Any use of a permanent mounting device, such as those disclosed in Jeffries, Edfors, or Russell, would eliminate the ability to remove or insert devices into the fixture of Chiu during testing or burn-in. Further, the epoxies or adhesives used to secure the support in the Jeffries, Edfors, or Russell references would make those devices unsuitable for use during testing or burn-in if replacement of chips or devices is desirable as described in Chiu. Any stability provided by the securing techniques of Jeffries, Edfors, or Russell would completely eliminate the ability to remove or replace devices in the heat sink/fixture of Chiu. Therefore, the Examiner’s assertion that it would have been obvious to one having ordinary skill in the art to secure the support via the techniques disclosed in Jeffries, Edfors, or Russell in the device disclosed by Chiu for “better stability” is not supported

by the references nor any rational reason why one of ordinary skill in the art would make this combination.

Finally, the combination of the cited references is improper because the proposed modification renders Chiu unsatisfactory for its intended purpose. M.P.E.P. § 2143.01(V). As stated in Chiu, a purpose of the invention disclosed therein is to provide “easy repair and replacement of devices.” Chiu, col. 3, lines 63. In the present rejection, the Examiner is proposing to combine securing the fixture in Chiu by the techniques disclosed in Jeffries, Edfors, or Russell such as via adhesive, epoxy, or solder. As discussed above, during testing or burn-in of the devices in the fixture of Chiu, “the legs 31c and 31d are opened or moved apart to insert the heat sinks 16 into slots 31b.” *Id.* at col. 3, lines 24-26. Securing the fixture, as suggested by the Examiner, would prevent the legs 31c and 31d of Chiu from being opened or moved so that devices may be inserted or removed during testing or burn-in. Removing the ability to open or move the legs 31c and 31d of the heat sink/fixture 31 of Chiu directly contradicts the purpose of the heat sink/fixture 31 described therein. Thus, using the secured support techniques of Jeffries, Edfors, or Russell with the techniques disclosed in Chiu would eliminate the purpose of the invention disclosed in Chiu and renders Chiu unsatisfactory for its intended purpose.

Therefore, for at least the reasons discussed above, Appellants respectfully assert that the combination of Chiu with the secondary references of Jeffries, Edfors, or Russell, is improper. Accordingly, the cited references cannot render the recited subject matter obvious. Appellants respectfully request withdrawal of the pending rejection under 35 U.S.C. §103 and allowance of independent claims 33, 68, and 71, as well as the claims that depend therefrom.

B. **Ground of Rejection No. 2:**

The Examiner rejected claims 39, 40, 43-45, and 74 under 35 U.S.C. § 103(a) as being unpatentable over Chiu in view of Jeffries and further in view of Cipolla et al., U.S.

Patent No. 5,343,366 (hereinafter "Cipolla") or alternatively in view of Shuff, U.S. Patent No. 5,812,374 (hereinafter "Shuff"). Appellants respectfully traverse this rejection.

Claims 39, 40, and 43-45 are dependent on claim 33, and claim 74 is dependent on claim 71. As discussed above with reference to the first ground of rejection, Chiu does not disclose "a cross piece coupled to the surface" as recited in independent claim 71. The secondary references Jeffries, Edfors, or Russell, do nothing to obviate the deficiencies of the primary reference discussed above with regard to the claim 71. Additionally, as admitted by the Examiner, Chiu does not disclose a "support is secured to said surface" as recited in independent claim 33. *See* Final Office Action, page 3 ("Chiu discloses the claimed invention except the support being secured to the surface."). Further, as discussed above, the combination of Chiu with the secondary references, Jeffries, Edfors, or Russell is improper, so the cited combination cannot obviate independent claim 33 and 71. The cited references do not disclose or suggest all of the elements of the claimed invention, and thus, cannot possibly render the claimed subject matter obvious. Accordingly, Appellants respectfully request withdrawal of the Examiner's rejection and allowance of dependent claims 39, 40, 43-45, and 74.

Conclusion

Appellants respectfully submit that all pending claims are in condition for allowance. However, if the Examiner or Board wishes to resolve any other issues by way of a telephone conference, the Examiner or Board is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Date: July 16, 2008

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8. **APPENDIX OF CLAIMS ON APPEAL**

33. An electronic device, comprising:
 - a plurality of integrated circuit packages;
 - a contact surface electrically connected to each of said packages; and
 - a support arranged to engage each of said packages at a point spaced above said surface to prevent movement of said packages relative to said surface, wherein said support is secured to said surface.
34. The device of claim 33, wherein each of said packages is contacted on its upper end.
35. The device of claim 33, wherein said support includes a pair of surfaces which engage each of said packages on two opposed surfaces, sandwiching said packages.
36. The device of claim 35, wherein said support is resiliently biased against the sides of said packages.
37. The device of claim 36, wherein said support contacts the side edges of said packages.
38. The device of claim 33, wherein said support is made of a heat conducting material.
39. The device of claim 38, wherein said material is a conformal material.
40. The device of claim 38, wherein said material is a foam having heat conductive particles dispersed through it to increase its heat conductivity.

41. The device of claim 37, wherein said support includes outwardly extending tabs arranged to engage depressions in said packages.
42. The device of claim 33, wherein said support is directly connected to said surface.
43. The device of claim 35, wherein said support is made at least in part of plastic foam.
44. The device of claim 43, wherein said support is made of plastic foam with a plurality of slots formed therein, each slot sized to resiliently engage one of said modules.
45. The device of claim 44, wherein said foam includes adhesive on its bottom to secure said foam to said surface.
68. An electronic device, comprising:
 - a plurality of integrated circuit packages connected to a surface; and
 - at least one rail coupled to the surface, wherein the rail extends along the sides of the plurality of integrated circuit packages and is configured to engage the plurality of integrated circuit packages.
69. The electronic device of claim 68, wherein the at least one rail is coupled to the surface by at least one post coupled to the surface and extending perpendicularly therefrom.
70. The electronic device of claim 69, wherein the at least one rail comprises tabs extending towards the plurality of integrated circuit packages.
71. An electronic device, comprising:
 - a plurality of integrated circuit packages connected to a surface; and

a cross piece coupled to the surface and extending over the plurality of integrated circuit packages in a direction transverse to the plurality of integrated circuit packages.

72. The electronic device of claim 71, wherein a plurality of supports extend from the cross piece towards the surface and are configured to engage the plurality of integrated circuit packages.

73. The electronic device of claim 71, wherein the cross piece is coupled to the surface by at least one post coupled to the surface and extending perpendicularly therefrom.

74. The electronic device of claim 71, wherein the cross piece consists essentially of a plastic and the plurality of supports consist essentially of a foam material.

9. **EVIDENCE APPENDIX**

None.

10. **RELATED PROCEEDINGS APPENDIX**

None.